

Hands-on Lab: Joins in MySQL using phpMyAdmin

Estimated time needed: 20 minutes

In this lab, you will learn how to create tables and load data in the MySQL database service using the phpMyAdmin graphical user interface (GUI) tool.

Software Used in this Lab

In this lab, you will use [MySQL](#). MySQL is a Relational Database Management System (RDBMS) designed to efficiently store, manipulate, and retrieve data.



To complete this lab you will utilize MySQL relational database service available as part of IBM Skills Network Labs (SN Labs) Cloud IDE. SN Labs is a virtual lab environment used in this course.

Objectives

After completing this lab, you will be able to:

1. Determine the correct type of join to use for a given problem.
2. Write and execute joins to query data from multiple tables.

Database Used in this Lab

Mysql_learners database has been used in this lab.

Here you will be creating and inserting data into the below mentioned 3 tables

- 1.chicago_public_schools
- 2.chicago_socioeconomic_data
- 3.chicago_crime

Here you will be using 3 dump files for this purpose.

[chicago_public_schools](#)

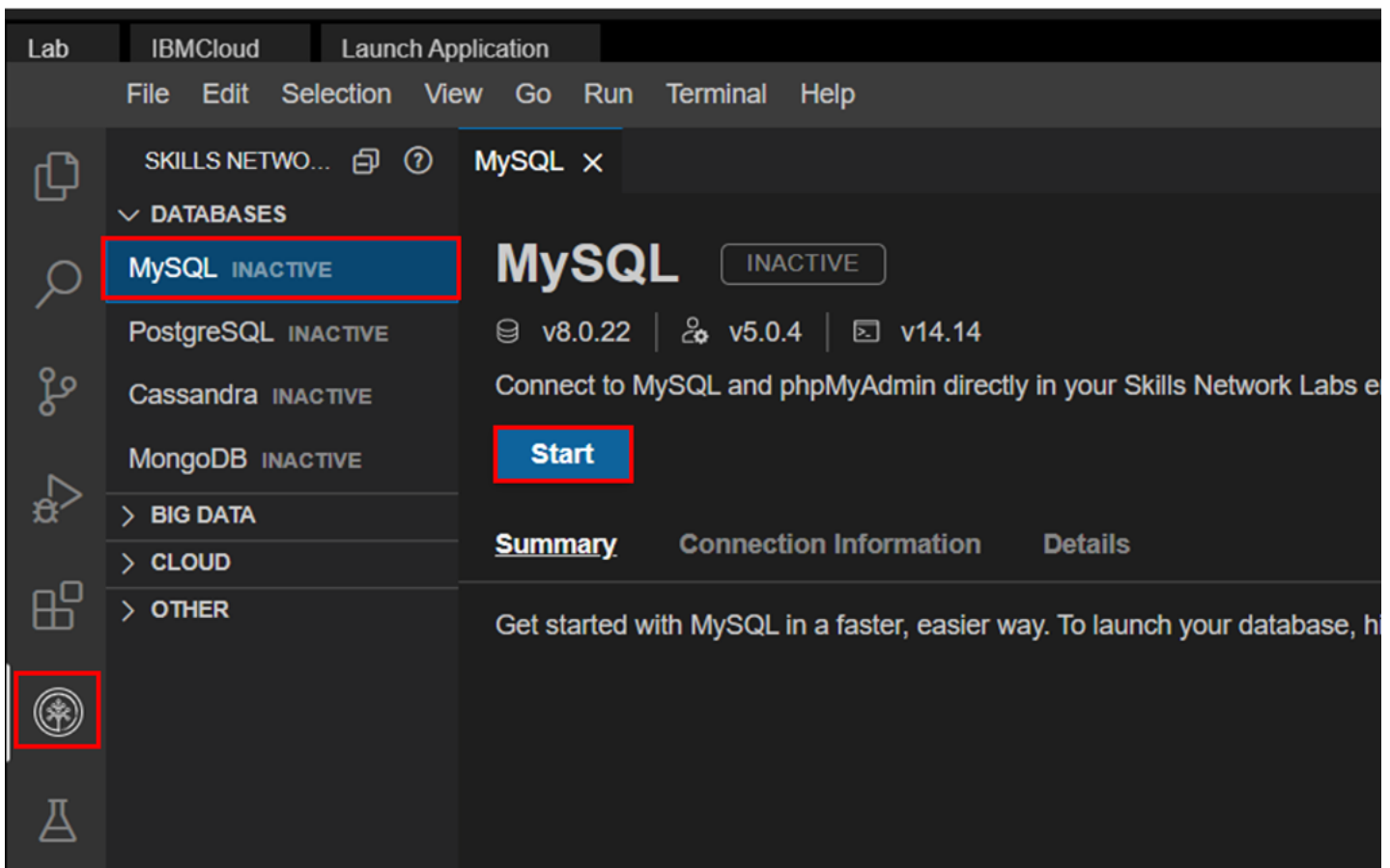
[chicago_crime](#)

[chicago_socioeconomic_data](#)

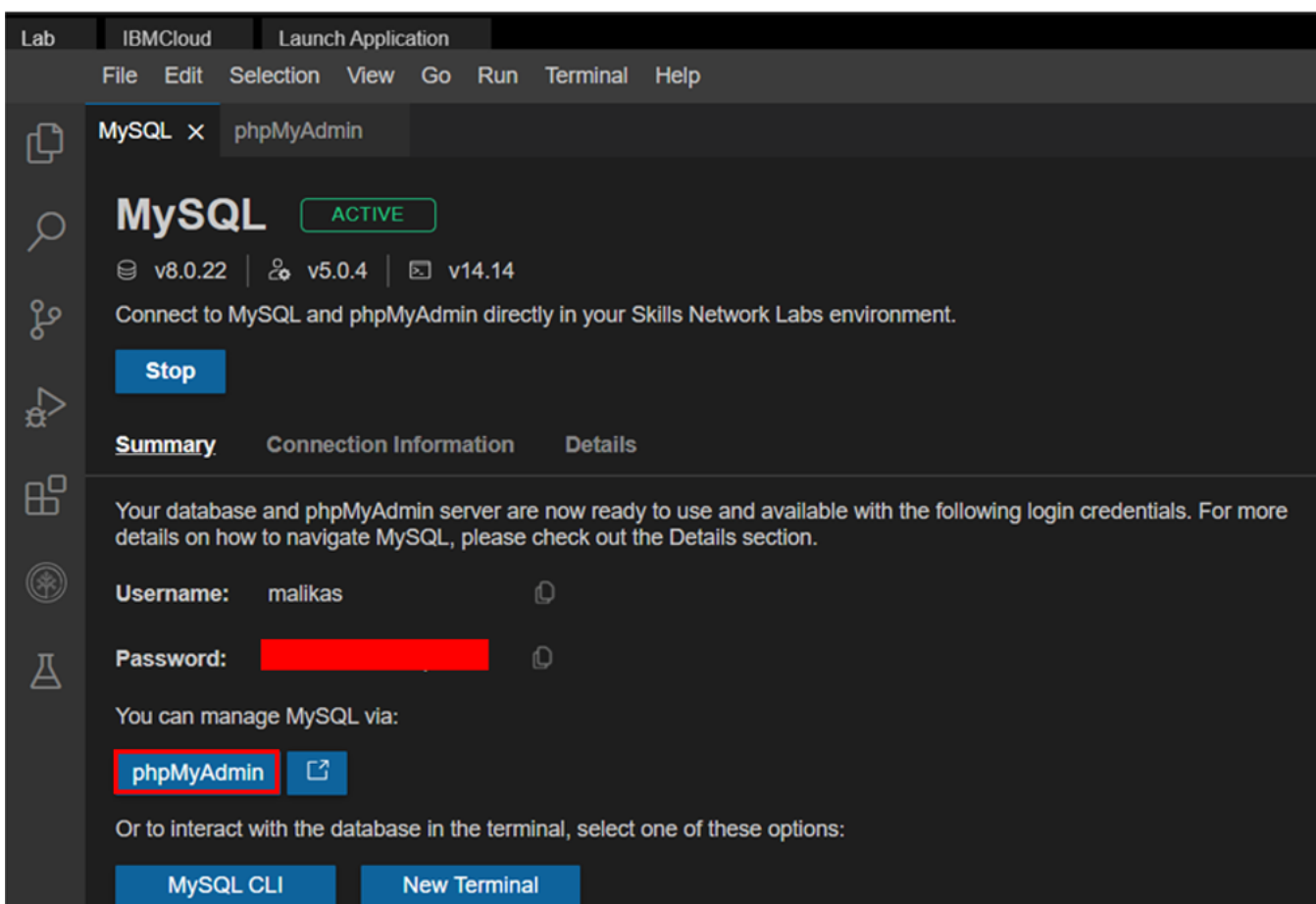
Task A: Create a database

1. Click on **Skills Network Toolbox**. In **Database** section, click **MySQL**.

To start the MySQL click **Start**.



2. Once **MySQL** has started, click on **phpMyAdmin** button to open **phpMyAdmin** in the same window.



3. You will see the phpMyAdmin GUI tool.



Recent

Favorites

- New
- information_schema
- mysql
- performance_schema
- sakila
- sys

Server: mysql:3306



Databases



SQL



Status

General settings



Server connection collation: ?

utf8r



More settings

Appearance settings



Language ?

English



Theme:

pmahomme ▼

4. In the tree-view, click **New** to create a new empty database. Then enter **Mysql_Learners** as the name of the database and click **Create**.

The encoding will be left as **utf8mb4_0900_ai_ci**. UTF-8 is the most commonly used character encoding for content or data.

Proceed to Task B.

Databases

SQL

Status

User accounts

Export

Import

Settings

Binary log

Databases

Create database

Mysql_learners

utf8mb4_0900_ai_ci

Create

	Database	Collation	Master replication	Action
<input type="checkbox"/>	information_schema	utf8_general_ci	✓ Replicated	Check privileges
<input type="checkbox"/>	mysql	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges
<input type="checkbox"/>	performance_schema	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges
<input type="checkbox"/>	sys	utf8mb4_0900_ai_ci	✓ Replicated	Check privileges

Total: 4

☐ Check all With selected: Drop

Note: Enabling the database statistics here might cause heavy traffic between the web server and the MySQL server.

- Enable statistics

Load the dump files one by one into the database **Mysql_learners** by clicking the **Import** tab and choose the file.
Click on **Go** button.

Importing into the database "Mysql_learners"

File to import:

File may be compressed (gzip, bzip2, zip) or uncompressed.

A compressed file's name must end in **.[format].[compression]**. Example: **.sql.zip**

Browse your computer:

Choose File

 chicago_pu..._schools.sql (Max: 2,048KiB)

You may also drag and drop a file on any page.

Character set of the file:

utf-8

Partial import:

☒ Allow the interruption of an import in case the script detects it is close to the PHP timeout limit. *(This might be a good way to import large files,*

Skip this number of queries (for SQL) starting from the first one:

0

Other options:

☒ Enable foreign key checks

Format:

Console

The screenshot displays the phpMyAdmin web interface. On the left sidebar, the 'Mysql_learners' database is selected, and the 'chicago_public_schools' table is visible under a 'New' button. The main panel shows the 'SQL' tab with a list of executed queries and their results. The first query is an import statement: 'Import has been successfully finished, 22 queries executed. (chicago_public_schools.sql)'. Subsequent queries show empty result sets and various SQL mode and character set settings.

Server: mysql:3306 » Database: Mysql_learners

Structure SQL Search Query Export Import Opera

Recent Favorites

New
+ information_schema
+ mysql
- Mysql_learners
+ New
+ chicago_public_schools
+ performance_schema
+ sys

✓ Import has been successfully finished, 22 queries executed. (chicago_public_schools.sql)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0008 seconds.)

-- phpMyAdmin SQL Dump -- version 5.0.4 -- <https://www.phpmyadmin.net/> -- -- Host:
Version: 7.4.15 SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO"

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

START TRANSACTION

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

SET time_zone = "+00:00"

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0005 seconds.)

/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */

The tables are created and the data is loaded successfully. Repeat the same operation with the other 2 dump files to create and load the tables.

You will see a screen as below

The screenshot shows a MySQL IDE interface. On the left, the 'Recent' and 'Favorites' tabs are visible. The 'Favorites' tab is active, showing a tree structure of databases: 'information_schema', 'mysql', 'Mysql_learners', 'performance_schema', and 'sys'. Under 'Mysql_learners', there are three tables: 'chicago_crime', 'chicago_public_schools', and 'chicago_socioeconomic_data'. The main area on the right displays a SQL query and its execution results. The query is a complex SELECT statement with a VALUES clause. The results show four status messages, each indicating that MySQL returned an empty result set (i.e. zero rows) and the query took a small amount of time (0.0002 or 0.0003 seconds). The status messages are: 'MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)', 'COMMIT', 'MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)', and 'MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)'. Below the status messages, there are four SQL statements: '/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */', '/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */', and '/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */'. At the bottom, there is a 'Console' tab.

Exercise

Problem 1

List the case number, type of crime and community area for all crimes in community area number 18.

▼ Hint 1

Use tables `chicago_public_schools` and `chicago_socioeconomic_data`.

▼ Hint 2

Use an inner join.

▼ Hint 3

The column `PRIMARY_TYPE` contains the crime type.

Problem 2

List all crimes that took place at a school. Include case number, crime type and community name.

▼ Hint 1

Use tables `chicago_crime` and `chicago_socioeconomic_data`.

▼ Hint 2

Use a left join or a right join.

▼ Hint 3

The column `LOCATION_DESCRIPTION` will help you find the crime location.

Problem 3

For the communities of Oakland, Armour Square, Edgewater and CHICAGO list the associated `community_area_numbers` and the `case_numbers`.

▼ Hint 1

Use tables `chicago_crime` and `chicago_socioeconomic_data`.

▼ Hint 2

Use the union operator with `LEFT` and `RIGHT` outer joins.

▼ Hint 3

Use `COMMUNITY_AREA_NUMBER` from `chicago_socioeconomic_data`.

Congratulations! You have completed this lab, and you are ready for the next topic.

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Changelog

Date	Version	Changed by	Change Description
2023-05-04	0.4	Rahul Jaideep	Updated Markdown file
2022-05-11	0.3	Appalabhaktula Hema	Updated hint
2022-04-07	0.2	Malika Singla	Updated screenshot
2022-02-10	0.1	Lakshmi Holla, Malika Singla	Initial Version

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